

Experiment

Aim: To determine the acid value of a given oil/fat

Reference:

1. Handbook of Analysis and Quality Control for Fruit and Vegetable Products, second edition by S. Ranganna, Published by Tata McGraw-Hill Publishing Company Limited, New Delhi, Page No.- 224.
2. Practical Pharmacognosy by Saroja Joshi and Vidhu Aeri; Published by Frank Bros. & Co. (Publishers) Ltd.; First Edition; 2009: 297.
3. Indian Pharmacopeia 2010; Part I:84.

Requirement:

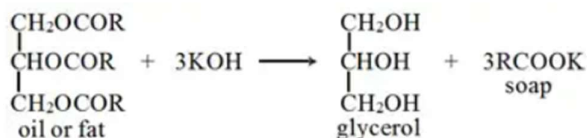
Apparatus: Volumetric flask, Pipette, Burette, beaker, glass rod, etc.

Chemicals: Ethanol, Ether, 0.1 M potassium hydroxide, Phenolphthalein

Principle:

The acid value is the number that expresses in milligrams the amount of potassium hydroxide necessary to neutralize the free acids present in 1 g of the substance. Here, direct titration takes a neutralized mixture of equal volumes of ethanol (95%) and ether as solvent and phenolphthalein as indicator.

Reaction:



Procedure:

About 10 g (w) of the sample is dissolved in 50 ml of equal volumes of ethanol (95%) and ether, previously neutralized with 0.1 M potassium hydroxide to phenolphthalein solution. If the sample does not dissolve in the cold solvent, the flask is connected with a reflux condenser and slowly warmed, with frequent shaking, until the sample dissolves. 1 ml of phenolphthalein solution is added and titrated with 0.1 M potassium hydroxide until the solution remains faintly pink after shaking for 30 seconds.

Observation

No. of Observation	Initial Burette Reading (ml)	Final Burette Reading (ml)	Difference (ml)	Average (ml)
1				n =
2				
3				

Calculation

$$\text{Acid value} = \frac{\text{Volume of acid required KOH} \times \text{Equivalent Factor} \times 1000}{w}$$
$$= \frac{n \times 0.00561 \times 1000}{w}$$

Where,

n = the number of ml of 0.1 M potassium hydroxide required;

w = the weight, in g, of the substance.

Result:

The acid value of the given oil/fat is

<https://www.pharm>